

REMARKS

This paper is submitted in response to the office action dated October 30, 2008. Claims 3, 4, 6, 14, 15, 20, 21-25, and 27 are currently pending, with claims 20 and 22 being the only independent claims. Claims 3, 4, 6, 14, 15, 21, and 27 depend from independent claim 20 and claims 23-25 depend from independent claim 22. Claims 1, 2, 5, 7-13, 16-19, and 26 have been canceled by previous amendments.

The Examiner rejected Claims 3, 4, 6, 14, 15, 20-25, and 27 under 35 U.S.C. §112, second paragraph as being indefinite. The Examiner identifies the limitations recited in independent claims 20 and 22 concerning the anatomical hip pivot points and anatomical knee pivot point of a user as being unclear. Specifically, the phrases "that is positioned to be at the anatomical hip pivot point of the user of the seating system" and "the leg support pivot point being positioned to be at the anatomical knee pivot point of the user of the seating system" are sufficiently unclear to render the claim indefinite. These rejections are respectfully traversed.

As specifically disclosed in the specification:

The seat back pivot points 62 are preferably positioned relatively high on the seat tray arms 52...the pivot points 62 are positioned so that they coincide with the anatomic pivot point of the user's body for the greatest conformance to the user's body during the recline of the seat back 56.
Par. [0025], Lines 11-15 (emphasis added).

...the leg support 22 pivots automatically at the knee joint of the user.
This movement allows the user to tone into full extension without placing undue stress on the mechanical components of the seating system
30....Since the pivot points 62, 64 of the seating system 30 approximate the anatomical pivot points of the user's body, dynamic action occurs without introducing shear between the seat tray extension 38 or the seat back extension 66 and the user's body. In addition, the length of the leg support 22 does not have to change as the leg support 22 swings away from and towards the seating system 30....Since all the pivot points of the seating system 30 are based upon the pivot points of the user, the seating components maintain their relationship with the user.
Par. [0033], Lines 4-18 (emphasis added).

By virtue of the relative orientation of the pivot points of the personal mobility vehicle to the natural articulation points of the human body, the functional operation and

construction of the personal mobility vehicle are clearly defined. It is intrinsically known by any human being that knees and hips bend, and bend in specific and defined ways. Furthermore, when their knees and hips bend outside of these well defined ways, pain and injury result. Those skilled in the art know that knees and hips have well defined anatomical pivot points that establish rotational centerlines. One need look no further than to known joint-related injuries when movements of the knees or hips occur in an off-axis relationship to these anatomical pivot points.

These anatomical pivot points, and their attendant centerlines, can be oriented relative to adjacent articulating structures. Such a relative orientation allows these articulating structures to be positioned relative to specific and known points on the user. Thus, no lack of clarity can exist when describing the relative orientation of a structure with reference to the pivot points of a user's body. Finally, Applicants note that the Hanson et al. reference cited by the Examiner provides a similar anatomical description of the user's pivot points. "[T]he pivot point, C, is positioned at an anatomically correct pivot point of the pelvic area of the occupant." (See Hanson, Col.5, Lines 11-13). Furthermore, Claim 31 of the Hanson et al. reference recites that "the back rest pivots about an anatomically correct pivot point of an occupant when seated in the stroller." From the above, it is clear that one skilled in the art would sufficiently understand references to anatomical pivot points of knees and hips in order to practice the invention.

In order to provide additional evidence of a clear understanding by those of ordinary skill in the art, attached is the declaration of Peter N. Cionitti, who is an expert in the field of seating and positioning for personal mobility vehicles. Mr. Cionitti states that one skilled in the art of designing systems to accommodate disabled persons, generally, would be familiar with the kinematic operation of various joints and articulation points of the human body as well as the structural movements and limitations of articulating devices, such as hinges, pivot pins, and the like, that support and react to user movements. Thus, one skilled in the art would understand that joints, such as knees and hips, have anatomical pivot points and would know that these anatomical pivot points establish rotational centerlines. Furthermore, one skilled in

wheelchair seating design would understand that the rotational centerlines of the anatomical pivot points can be associated with adjacent pivoting or hinged structures. Thus, positioning of adjacent articulating structures for complimentary movement relative to the pivoting of a knee or hip would be clearly understood by a designer of personal mobility vehicle seats. Therefore, there is no lack of clarity in the cited phrases and no indefiniteness resulting in the rejected claims.

The Examiner rejected independent claim 20 as being obvious over the Conner et al. reference in view of the Hanson et al. reference. This rejection is respectfully traversed.

Claim 20 defines a seating system for a personal mobility vehicle capable of accommodating extension tone of a seating system user. The seating system includes a base mounted for movement on wheels where the base includes a tilt-in-space block with a guide slot configured to receive a guide pin. A seat tray is positioned in a seating shell base that includes a pivot post. A sliding mechanism mounts the seat tray with respect to the base for forward and rearward sliding movement *in a single plane* in a low friction manner. A seat back is pivotally mounted relative to the seat tray at a seat back pivot point that is *positioned to be at the anatomical hip pivot point of the user* of the seating system. A leg support is pivotally mounted with respect to the seat tray and *mounted in a manner that allows the leg support to pivot as the user experiences extension tone, with the leg support pivot point being positioned to be at the anatomical knee pivot point of the user* of the seating system. The sliding mechanism is configured with sufficiently low friction to enable the user of the seating system to experience extension tone with little resulting resistance to forward movement of the seat tray and little resulting resistance to pivoting of the leg support. Furthermore, the seating system is configured for forward movement of the seat tray and pivoting of the leg support *caused by tone extension of the user*.

As noted by the Examiner, the Conner et al. reference does not teach a base having a tilt-in-space block and wheels for movement and further lacks a seating shell with a pivot post. Rather, the Conner et al. reference discloses a barber or dentist chair that is fixed to the floor, as clearly shown in Fig. 1. The chair of the Conner et al.

reference, furthermore, is not adaptable to movement by virtue of water supply pipes that connect through the base cylinder 2. Additionally, the Conner et al. reference does not teach or suggest that the leg pivot point is positioned at the anatomical knee pivot point of the user nor that the seat back pivot point is positioned at the anatomical hip pivot point of the user.

The Examiner contends that it would be obvious to modify the fixed barber chair of the Conner et al. reference with the stroller of the Hanson et al. reference to arrive at the present invention. The Examiner's combination of the references, however, does not result in a seating system that is responsive to tone extension and contraction of a user. More pertinently, however, the Conner et al. reference does not teach or suggest that the leg support is *mounted in a manner that allows the leg support to pivot as the user experiences extension tone*. Quite the contrary, the Conner et al. reference teaches away from such user generated movements of the chair components. Specifically, the Conner et al. reference states that "[i]t is essential that the controlling mechanism for the chair adjusting means shall be so positioned and the auxiliary seat be so mounted that the operator can manipulate the controlling mechanism without leaving his seat." (See Pg. 1, Lines 20-25, emphasis added). Furthermore, the operation of the seat back is controlled by the operator, not the user. Therefore, the combination of the Conner et al. and Hanson et al. references cannot be combined in the manner asserted by the Examiner.

Thus, claim 20 is clearly patentably distinct and non-obvious over the cited art. For at least the reasons stated in support of independent claim 20, claims 3, 4, 6, 14, 15, 21, and 27 which depend from it are also necessarily patentable. Applicants respectfully request withdrawal of the rejection and issuance of a notice of allowance.

The Examiner rejected independent claim 22 as being obvious over the Conner et al. reference and in view of the Hanson et al. reference and in further view of the Markwald reference. This rejection is respectfully traversed.

Claim 22 recites a seating system similar to that defined in claim 20 above that includes a leg support that is pivotally mounted with respect to the seat tray and *mounted in a manner that allows the leg support to pivot as the user experiences*

extension tone, with the leg support pivot point being positioned to be at the anatomical knee pivot point of the user of the seating system. Likewise, the seating system is configured for forward movement of the seat tray and pivoting of the leg support caused by tone extension of the user. In addition, the seating system of Claim 22 includes a biasing element for biasing the seat tray rearward relative to the base. The biasing element stores energy upon application of force by the user that moves the seat tray forward. The biasing element is further configured to release energy when a user relaxes to automatically move the seat tray rearward.

As stated above, the combination of the Conner et al. and the Hanson et al. reference is insufficient to direct one of ordinary skill to the present invention. The Examiner's inclusion of the Markwald reference to show that the biasing element would compel the seat tray back to its original position ignores the fact that the Conner et al. reference centers around operator control of the seat position, not allowing the seat position to react to tone extension and contraction of the user. As such, the Markwald reference adds nothing to direct one of ordinary skill to the invention of independent claim 22.

Thus, independent claim 22 also is clearly patentably distinct and non-obvious over the cited art combination. For at least the reasons stated in support of independent claim 22, claims 23-25 which depend from it are also necessarily patentable. Applicants respectfully request withdrawal of the rejection and issuance of a notice of allowance.

Respectfully submitted,

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